In the claims:

Please amend the claims as follows:

1-7 (canceled)

8. (new) A closed-loop continuously operating pyrolysis system for processing rubber waste, the system comprising:

a pyrolysis furnace;

a dosing tank operative to feed the rubber waste to the pyrolysis furnace;

a external heating unit operative to heat an outer surface of the pyrolysis furnace, the heating unit including a flue-gas outlet;

a gas cooler operative to receive gas from the pyrolysis furnace;

a separating unit operative to separate product received from the gas cooler and including a gas outlet;

a solid product sump operative to receive solid product from the pyrolysis furnace;

a heat exchanger arranged between the pyrolysis furnace and the solid-product sump, the heat exchanger being operative to receive solid product from the pyrolysis furnace and gas from the gas outlet of the separating unit;

a by-pass gas conduit arranged between the heating unit and the gas outlet of the separating unit and operative to feed gas from the gas outlet of the separating unit to the pyrolysis furnace;

a circulation ventilator and a suction control valve operative to control flow of gas from the gas outlet of the separating unit to the by-pass conduit and the heating unit;

a gas-flow control valve operative to control flow of gas between the circulation ventilator and the heat exchanger;

a gas meter arranged between the gas outlet of the separating unit and the heat exchanger and operative to monitor gas through the gas-flow control valve;

a temperature detector operative to measure temperature within the pyrolysis furnace and being operatively connected to the heating unit; and

at least one of a pressure gauge and a pressure transmitter operative to indicate a pressure within the pyrolysis furnace and being operatively connected to the suction control valve.

9. (new) A closed-loop continuously operating pyrolysis system for processing rubber waste, the system comprising:

a pyrolysis furnace;

a external heating unit operative to heat an outer surface of the pyrolysis furnace, the heating unit including a flue-gas outlet;

a gas cooler operative to receive gas from the pyrolysis furnace;

a separating unit operative to separate product received from the gas cooler and including a gas outlet;

a solid product sump operative to receive solid product from the pyrolysis furnace;

a heat exchanger arranged between the pyrolysis furnace and the solid-product

sump, the heat exchanger being operative to receive solid product from the pyrolysis furnace and gas from the gas outlet of the separating unit; and

a by-pass gas conduit arranged between the heating unit and the gas outlet of the separating unit and operative to feed gas from the gas outlet of the separating unit to the pyrolysis furnace.

10. (new) The system according to claim 9, further comprising:

a circulation ventilator and a suction control valve operative to control flow of gas from the gas outlet of the separating unit to the by-pass conduit and the heating unit.

11. (new) The system according to claim 10, further comprising:

a gas-flow control valve operative to control flow of gas between the circulation ventilator and the heat exchanger.

12. (new) The system according to claim 11, further comprising:

a gas meter arranged between the gas outlet of the separating unit and the heat exchanger and operative to monitor gas through the gas-flow control valve.

13. (new) The system according to claim 9, further comprising:

a temperature detector operative to measure temperature within the pyrolysis furnace and being operatively connected to the heating unit; and

at least one of a pressure gauge and a pressure transmitter operative to indicate a pressure within the pyrolysis furnace and being operatively connected to the suction

control valve.

14. (new) The system according to claim 11, further comprising:

a dosing tank operative to feed the rubber waste to the pyrolysis furnace.

15. (new) The system according to claim 9, wherein the pyrolysis furnace is a rotary-drum furnace and the heating unit is an oil burner.

16. (new) The system according to claim 9, wherein the liquid outlet of the separating unit is connected to the heating unit.

17. (new) The system according to claim 9, wherein the solid-product sump comprises a sampling unit.

18. (new) The system according to claim 12, wherein the gas-meter comprises a measuring orifice.

19. (new) The system according to claim 9, wherein the gas coolers comprises water-cooled condensers and the separating unit comprises a gravitational separating unit including a liquid outlet.

20. (new) The system according to claim 11, further comprising:

a concentration meter arranged downstream of the gas outlet of the separating

unit.

21. (new) The system according to claim 9, wherein the gas cooler comprises a pair of gas coolers.

22. (new) The system according to claim 9, wherein the separating unit comprises a pair of separating units.